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THE
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A MUSCARDINE FUNGUS ON A CATERPILLAR OF *ANTHEREA EUCALYPTI* SCOTT (LEPIDOPTERA, SATURNIIDAE)

By R. CLOSE
Department of Agriculture, Horticulture Division, Wellington.

Three Emperor Gum Moth caterpillars (*Antherea eucalypti* Scott), collected in May, 1956, by G. Morrison of Wellington, from a Pepper Tree *(Schinus molle)* which was growing in the grounds of Massey College, Palmerston North, were taken to Wellington and fed on gum leaves *(Eucalyptus sp.)*. Two of the caterpillars soon pupated normally whereas the third sickened and died on May 27.

After the caterpillar had been dead for approximately five days white mycelial growth began to appear. It first appeared in the thoracic region and then progressed over the remainder of the body so that by June 9 the body was completely covered. The fungus sporulated on June 12 when slides were made and culture tubes were inoculated. From a microscopic examination of the spores and associated structures, the fungus was tentatively identified as a *Beauveria sp.*

As soon as the fungus had grown sufficiently, one of the culture tubes was despatched to Dr. Steinhaus of the University of California for confirmation and identification of the particular species concerned. The culture has now been identified as *Beauveria bassiana* (Bals.) Vuill. In making this identification Dr. Steinhaus was following the new taxonomic arrangement of *Beauveria spp.* as proposed by McLeod (1954) in which the genus *Beauveria* has been revised and now has only two valid species. These are *B. bassiana* and *B. tenella* (Delacr.) Siem. and they are distinguished by the fact that *B. bassiana* has about 50% of its spores globose whereas *B. tenella* has only 2% of its spores globose, the remainder being oval.

It is interesting to note that these muscardine fungi can be of some importance in the natural control of many insect pests.

They have been known for a long time in the sericultural industry where it is difficult to control the heavy losses which they can cause in the rearing of silk-worms.

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A NOTE ON *HEMIANDRUS MONSTROSUS* SALMON (ORTHOPTERA, STENOPELMATIDAE, ANOSTOSTOMINAE)

By W. B. R. LAIDLAW, D.Sc.

Department of Scientific and Industrial Research, Entomology Division, Nelson.

Since Salmon named and described this species, two more specimens have been found, the latest by the writer. This latest specimen further confirms the normality of the unusual mandibular structure. As fresh occurrences are likely to be noted in the future, the following account is offered as a contribution to our knowledge of the species to date.

Dr. Salmon (1950), recorded the species from a single male. Because of its unique mandibular structure, he named it "*monstrosus*"; furnishing a brief description, accompanied by photographs of the entire insect and the sub-genital plate.

Since then, Mr. E. G. Turbott of the Auckland Museum has recorded another specimen, also a male, which was collected by H. C. Abraham from Orakawa Bay, Bay of Islands, on October 17, 1948.

The present specimen, from which all the figures and descriptions are derived, was collected by the writer on January 31, 1955, in Waipoua Kauri Forest. It was taken about midday in full sunlight, moving actively along the extremity of a branch of a low growing bush, a few yards from the road. This is also a male; the female has still to be identified.

The present specimen, preserved in 60 per cent. alcohol, measures 24 mm. long, from vertex to tip of anal cerci. The outstanding feature of the species is the extraordinary process arising from the base of each mandible, and greatly exceeding the mandible proper in length. These processes appear in front view as two long, overlapping, sickle-shaped "jaws" (Figs. 1, 2, 4, 5.). No particular function has yet been ascribed to them, but it is not improbable that they form a sexual character. They are perhaps connected with mating, in a similar way to the reputed function of the enlarged mandibles of certain male lucanid beetles.

Certain malformation features are present. The 3rd segment of the right maxillary palp is divided into two segments. The left maxillary palp, apparently normal, is 5-segmented (Figs. 10, 11).

Both front tarsi show developmental malformation; the two ultimate joints being much reduced, without tarsal claws (Fig. 13). In the legs, only the front coxae carry a spine, though Salmon gives it as a generic character that a spine is borne on first and second coxae. The basal antennal segments also fail to conform to his description (Fig. 1).

Full characters for the genus *Hemiandrus* are given by Salmon (1950) as well as a detailed description of the species from his holotype specimen, which should be consulted.

The following selected details, given for the present specimen, are provided for amplification and comparison.

Colour.—Reddish testaceous above: on vertex, dorsal tergites, outer and upper surfaces of femora, tibiae and tarsi; pitchy on antennae, especially flagellar region, mandible teeth, and tarsal claws apically; pale testaceous below and intersegmentally.

Pubescence.—Fine, short, even, on labrum, anal plate marginally, tarsi dorsally, and apical two segments of palps, slight to evanescent elsewhere.

Setae.—A few, scattered, on maxillary and labial palps; stronger and denser on lacinial inner margins, and on outer faces of glossae and paraglossae; sparsely scattered on tibiae and femora; long, uneven setiform hairs on anal cerci.

Head.—Vertex slightly domed, wider than pronotum; eyes small, adjacent to outer margin of antennal bases; oval depression between antennal bases indicates position of aborted ocellus; *antennae:* 60 mm. long; basal joint swollen cylindrical, narrowed basally, twice as long as broad; 2nd joint, minute cylindrical, ⅓ as long as first; 3rd joint, broad and cylindrical, longer than broad and larger than second; 4th joint, longer and narrower than 3rd; succeeding segments progressively shorter (Fig. 1); *clypeus* trapezoidal, narrow anterior apex more or less fused with base of spatulate labrum (Figs. 1, 2).

Maxillae.—Normal (except for malformed palp); galea 2-segmented; normal palp 5-segmented, the three distal joints elongate cylindrical, with terminal sense organ on 5th; (5th joint of right, malformed palp, apically clavate; club incompletely segmented at base, 3rd joint divides into two segments, making a 6-jointed palp; apical sense organ not apparent). (Figs. 10. 11.)

Labium.—Palps 4-segmented, apical joint short, wider than preceding, finely pubescent; glossae small, concave, narrowed apically; paraglossae 2-segmented, apical segment broad (Fig. 12).

Thorax.—Simple, pronotum broad, twice as long as meso- or metanotum (Fig. 2).

Legs.—Short anterior spine on front coxae only; 1st legs longer than 2nd.

FIGS. 1-15: A Note on *Hemiandrus monstrosus* Salmon.

Femora.—Hind, enlarged, typically swollen towards base; all femora spineless. A series of vertical rows of minute denticles on the upper inner margin of the base of the hind femur, contact vertical tiers of minute coronal ridges on the sides of abdominal segment 2, forming the stridulating organ (Fig. 2a).

Tibiae.—1st and 2nd tibiae have a few evenly spaced spines on their lower margins, with strong apical spines; the auditory organ occurs on the inner face of the 1st tibia, towards the base; hind tibiae long, narrow, slightly longer than femora, with a double row of short, widely spaced teeth; the marginal ones larger and curved, tarsal claws curved, simple (Figs. 13, 14, 15, 16).

Abdomen.—Simple, widest at base, rather short, extending back as far as apices of femora; *9th tergite:* Produced in front, medially in six evenly diminishing pairs of sulcate ridges, separate at first, the small anterior pair meeting in a point, the basal pair lying in an emargination of the 9th tergite; *10th tergite:* Strongly emarginate, divided medially; the small area on each side of the division enclosing two small, raised denticles; *subanal plate* (epiproct), slightly notched apically; cerci—as long as subgenital plate, extending beyond it for half their length, covered with long uneven outstanding setiform hairs (Fig. 8).

Genitalia.—Subgenital plate (ninth sternite) slightly longer than broad, widest at middle, apically emarginate; styles slightly more than ⅓ the length of the subanal plate; gonapophyses apically hooked, with a short, backward pointing, sub-apical barb (Figs. 7, 8, 9).

I wish to thank Mr. E. G. Turbott of Auckland Museum for kindly supplying me with the information given regarding the second specimen found.

Reference

Salmon, J. T. (1950). A revision of the New Zealand wetas. *Rec. Dom. Mus., Wellington,* **1** (8), 124–126.

Explanation of Figures

Fig. 1: Head, from front (× 4).

Fig. 2: Lateral view of head (hypopharyax and labium removed), thorax and first two abdominal segments (× 4). Showing mandible and process (Mdb., pr.) abdominal spiracle I, (sp. 1), stridulating ridges on abdominal segt. 2; and, Fig. 2a, rows of denticles, forming stridulating rasp on hind femur.

Fig. 3: Clypeus and labium, detail (× 4).

Fig. 4: Left mandible, showing teeth and process (× 4).

Fig. 5: Left mandible, and basal process (× 4).

Fig. 6: Right mandible, base (× 7).

Fig. 7: Lateral view of apical abdominal segments, and genitalia (× 4). (Styles, s; cerci, c; gonapophyses, g; podical plates, p.)

Fig. 8: Dorsal view, do. (denticles on sgt. 10-D.) (× 4).

Fig. 9: Ventral view, do. (× 4).

Fig. 10: Right maxilla (× 8). Note sub-clavate palp, and 3rd joint divided into 2 segments.

Fig. 11: Left maxilla (× 7). Note sensory organ on apical segment of palp.

Fig. 12: Labium (× 7). Note concave glossae.

Fig. 13: Right 1st leg—Auditory organ (a), coxal spine (s). (× 4).

Fig. 13a: Basal 2 tarsal joints after treatment with potash (× 4).

Fig. 14: Right 2nd leg (× 4).

Fig. 15: Right 3rd leg (× 4).

Fig. 16: Tarsal claws, dorsal view (× 4).

A MALE SPECIMEN OF *DEINACRIDA TIBIOSPINA* SALMON

By J. T. SALMON
Zoology Department, Victoria University College, Wellington.

Through the kindness of Mr. E. S. Gourlay of Nelson, I have recently been able to examine a male specimen of *Deinacrida tibiospina* previously described (Salmon, 1950) from the female only. This specimen agrees in general morphology with the female except in the matter of the hind femora on which the irregular superior spines are reduced to 5 in number, and the large prolateral superior spines on the distal half which are reduced to 2 and which are relatively smaller than they are in the female.

In general appearance this specimen (Fig. 1) closely resembles the female. The cerci are relatively long and tapering, clothed basally with long, fine, wavy hairs and distally with short to very short stiff hairs.

The length of the body is 32 mm., and the specimen was obtained by Mr. Gourlay at a height of 3,000 ft. on the lower slopes of Iron Hill, Cobb Valley, Nelson, amongst the decaying leaf masses under a *Dacrydium bidwillii* Kirk.

The subgenital plate is broadly rectangular, being about half as broad again as it is long, and bears two relatively long stylets on the distal margin which are clothed with short fine hairs. The distal margin of the plate bears two broadly curved, thickened ridges which enclose between them on the medial line a broad, shallow notch. The distal margin and the area of the plate between the stylets is heavily clothed with fine, medium length hairs (Fig. 2).

I have designated this specimen as a male allotype, and it is deposited in the collections of the Cawthron Institute, Nelson.

Reference

Salmon, J. T. (1950). A revision of the New Zealand wetas. *Dom. Mus. Rec. Ent.*, 1 (8), 124–126.

FIG. 1: *Deinacrida tibiospina.* Male allotype.

J. T. Salmon, Photo.

FIG. 2: *Deinacrida tibiospina*. Terminal segments and subgenital plate of male allotype.

I. A. Salmon, Photo.

A CHECK LIST OF NEW ZEALAND THYSANOPTERA

By D. SPILLER

Department of Scientific and Industrial Research, Plant Diseases Division, Auckland.

The initial sentence of a very recent paper (Doull, 1956a) so mis-states what is known regarding our thysanopteran fauna, that it seems desirable to present a check list of the known and recorded species. Of the twenty-two species recorded in this list, five species (*Isoneurothrips obscuratus* Crawford; *Othinanaphothrips spilleri* Crawford; *Neosmerinthothrips oleriae* Moulton; *Heptathrips tonnoiri* Moulton; and *Cleistothrips idolothripoides* Bagnall), and one sub-species (*Nesothrips propinquus breviceps* Bagnall), have been described from material collected in New Zealand and hence are possibly either indigenous or endemic. The remaining sixteen species are immigrants. Of these, eight were recorded in an earlier note (Spiller, 1951), one was recorded incidentally (Cottier, 1949), four have recently been recorded from cocksfoot (Doull, 1956a), and two are here recorded for the first time. The remaining species, *Haplothrips niger* Osborne, commonly known as the red clover thrips, has been present in the country for many years (Muggeridge, 1933) but it is only recently (Yates, 1952) that the uncertainties of the specific identification have been resolved.

Species are arranged in systematic order following Priesner (1949). References to the recorded New Zealand occurrences of each species are given in square brackets, and these are followed by any additional information on host plants or distribution based upon named specimens in the insect collection of the Plant Diseases Division.

Order: THYSANOPTERA.

Suborder: Terebrantia.

Aeolothripoidea: Aeolothripidae

1. *Aeolothrips fasciatus* (Linné.). [Doull, 1956a.]
   (a) On tomato (*Lycopersicum esculentum* L.), Gisborne, January 27, 1938;
   (b) on radish (*Raphanus sativus* L.), Auckland, January 10, 1940.

Thripoidea: Thripidae

2. *Heliothrips haemorrhoidalis* Bouche. [Muggeridge, 1935; Spiller, 1951.]

A common species now known from Kerikeri, Auckland and environs, Little Barrier Island, Tauranga and Palmerston North.

Additional hosts are walnut (*Juglans regia* L.); grape (*Vitis vinifera* L.); Natal plum (*Carissa grandiflora* A. DC.); *Luculia* sp.; *Fuchsia* sp.; and *Mandevilla* sp. Occurs from September to June.

3. *Hercinothrips bicinctus* Bagnall. [Cottier, 1949.]
   (a) On tomato *(L. esculentum),* Papatoetoe, February 6, 1945;
   (b) on *Escalonia macrantha* Hook. and Arn., Auckland, February, 1946; January 12, 1948; January 11, 1954;
   (c) on *Chrysanthemum* sp. cult., Auckland, February, 1946.
4. *Parthenothrips dracaenae* (Heeger). [Spiller, 1951.]
5. *Anaphothrips secticornis* Tyrbom. [Spiller, 1951.]
   (a) On dahlia (*Dahlia* sp. cult.), Auckland, January 11, 1939;
   (b) on pumpkin (*Cucurbita pepo* L.), Auckland, November 1, 1939;
   (c) no host, Auckland, November 21, 1948;
   (d) ditto, January 7, 1956.
6. *Anaphothrips obscurus* Muller. [Doull, 1956a.]
7. *Othinanaphothrips spilleri* Crawford. [Crawford, 1943, Spiller, 1951.]
8. *Aptinothrips rufus* Gmelin. [Doull, 1956a.]
9. *Chirothrips manicatus* Haliday. [Spiller, 1951; Doull, 1956a, b.]
   On *Agrostis tenuis* Sibth., Palmerston North, February 15, 1951.
10. *Limothrips cerealium* Haliday. [Doull, 1956a.]
    On tobacco (*Nicotiana tabacum* L.), Thorpe, no date.
11. *Taeniothrips simplex* Morison. [Spiller, 1951.]
    (a) On foliage of gladioli (*Gladiolus* sp. cult.), Auckland, February 4, 1942; February 7, 1952; January 10, 1954;
    (b) ditto, Gisborne, February 7, 1952.
12. *Taeniothrips kellyanus* Bagnall. New record.
    On fruit and foliage of grapefruit (*Citrus* sp. cult.) and lemon (*Citrus limon* (L.) Burm.f.); Helensville, Kumeu, Henderson, Auckland, and Gisborne; November to May; 21 collections.
13. *Taeniothrips brevicornis* Bagnall. New record.
    (a) On *Escalonia macrantha,* Auckland, February, 1946;
    (b) on unknown host plant, Auckland, January 12, 1948;
    (c) on tobacco (*N. tabacum*), Thorpe, no date.
14. *Isoneurothrips australis* Bagnall. [Spiller, 1951.]

15. *Isoneurothrips obscuratus* Crawford. [Crawford, 1941; Spiller, 1951.]

A very common species now known from Kerikeri, Paihia, Auckland and environs, Little Barrier Island, Hastings, New Plymouth, Mt. Egmont, Motueka, Christchurch, Roxburgh and Ettrick. It has been taken from the flowers of apple (*Pyrus malus* L.), bush wattle (*Albizzia lopantha* Benth), canna lily (*Canna generalis* Bailey), chinese gooseberry (*Actinidia chinensis* Planch.), *Doryanthes* sp., *Fatsia* sp., *Freycinetia banksii* A. Cunn., grape (*V. vinifera*), grapefruit (*Citrus* sp. cult.), lemon (*C. limon*), marigold (*Tagetes erecta* L.), nikau palm (*Rhopalostylis sapida* Wendl. and Drude), *Phormium colensoi* Hook.f., rose (*Rosa* sp. cult.), youngberry (*Rubus* sp. hybrid); and from the leaves and fruit of boysenberry (*Rubus* sp. hybrid), cyclamen (*Cyclamen persicum* Mill.), feijoa (*Feijoa sellowiana* Berg.), hemlock (*Conium maculatum* L.), grapefruit (*Citrus* sp. cult.), lemon (*C. limon*), manuka (*Leptospermum scoparium* Forst.), *Nothopanax simplex* (Forst.f.) Seem., peach (*Prunus persica* L. and Zucc.), *Pomaderris* sp., potato (*Solanum tuberosum* L.), *Protea cynaroides* L., pururi (*Vitex lucens* T. Kirk), rhododendron (*Rhododendron* sp. cult.), tobacco (*N. tabacum*). Each month of the year, except July.

16. *Thrips tabaci* Lindeman. [Spiller, 1951; Doull, 1956a.]

(a) In flower of marigold (*T. erecta*), Auckland, April 19, 1939;

(b) on strawberry (*Fragaria* sp. cult.), Auckland, December 19, 1947;

(c) on potato leaves (*S. tuberosum*), Palmerston North, April 3, 1930;

(d) in onion seed head (*Allium cepa* L.), Pukekohe, February 2, 1950;

(e) in chrysanthemum flowers (*Chrysanthemum* sp. cult), Christchurch, May 5, 1952;

(f) on tomato (*L. esculentum*), Gisborne, January 27, 1938;

(g) on tobacco (*N. tabacum*), Motueka, November, 1934.

Suborder: TUBULIFERA.

Phlaeothripidae

17. *Liothrips vaneeckei* Priesner. [Spiller, 1951.]

18. *Haplothrips niger* Osborne. [Muggeridge, 1933; Yates, 1952; Doull, 1956a.]

19. *Nesothrips propinquus breviceps* Bagnall. [Bagnall, 1924; Spiller, 1951.]

    On fruit of Meyer lemon (*Citrus* sp.), Helensville, March 13, 1952.

20. *Neosmerinthothrips oleriae* Moulton. [Moulton, 1949.]

21. *Heptathrips tonnoiri* Moulton. [Moulton, 1942.]

22. *Cleistothrips idolothripoides* Bagnall. [Bagnall, 1932.]

Acknowledgments

I wish to thank Dr. G. D. Morison, the North of Scotland College of Agriculture; Miss K. O'Neill, United States Department of Agriculture, and Mrs. E. E. Canter-Visscher, Plant Diseases Division, who have identified, or checked the identifications of the various thrips collections recorded in this list.

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RECORDS OF THREE COMMON LEAF-ROLLERS

By K. A. J. WISE
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To obtain more information about species of leaf-roller associated with various host plants a survey was carried out from April, 1950, to December, 1951. Specimens, collected from various host plants, were forwarded to this laboratory where each was reared individually. Almost all specimens proved to be either *Tortrix excessana* (Walker), *Austrotortrix postvittana* (Walker), or *Ctenopseustis obliquana* (Walker). These host plant records together with additional records from specimens in the Plant Diseases Division collection are given below.

Apium graveolens L. (celery).
*Austrotortrix postvittana.** Auckland, June (1).†

Aster sp. cult. (michaelmas daisy).
*Ctenopseustis obliquana.** Auckland, December (2).

Berberis sp. (barberry).
*Ctenopseustis obliquana.** Pukekohe, March (1).

Capsicum frutescens L. (sweet pepper).
*Austrotortrix postvittana.** Kaikohe, March (1).

Cedrus deodara Loud. (cedar).
*Tortrix excessana.** Christchurch, February (2).

Chimonanthus sp.
*Austrotortrix postvittana.** Christchurch, January (1).

Chrysanthemum sp. cult. (chrysanthemum).
*Tortrix excessana.** Christchurch, February (1).

Citrus sp. (orange).
Austrotortrix postvittana. Auckland, June (1 ex fruit). Hamilton, February (4).
Ctenopseustis obliquana. Auckland, January (1 ex fruit). Auckland, April (1 ex fruit). Auckland, June (1 ex fruit). Auckland, July (1 ex fruit).

Citrus sp.
Tortrix excessana. Auckland, December (2).
Ctenopseustis obliquana. Auckland, February (1). Auckland, December (3). Waikato, April (1).

* A new host plant record for species.

† The number in brackets is the number of specimens bred from a collection made at one place at one time.

Clianthus puniceus Banks and Soland. (red kowhai).
*Ctenopseustis obliquana.** Auckland, January (1).

Corynocarpus laevigata Forst. (karaka).
*Tortrix excessana.** Auckland, January (1).
*Ctenopseustis obliquana.** Auckland, January (1).

Cupressus sempervirens L. (cypress).
*Tortrix excessana.** Christchurch, November (2).

Cyclamen indicum Mill. (cyclamen).
*Ctenopseustis obliquana.** Auckland, October (8). Auckland, November (1).

Diospyros kaki L.f. (persimmon).
*Tortrix excessana.** Auckland, May (1 ex fruit).
*Austrotortrix postvittana.** Auckland, May (1 ex fruit).
*Ctenopseustis obliquana.** Auckland, May (1 ex fruit). Auckland, June (1 ex fruit). Auckland (1).

Dovyalis caffra Warb.
*Ctenopseustis obliquana.** Auckland, December (1).

Escalonia sp. (escalonia).
*Ctenopseustis obliquana.** Auckland, December (1 ex flower).

Eugenia smithii Poir.
*Ctenopseustis obliquana.** Auckland, December (1).

Feijoa sellowiana Berg. (feijoa).
*Ctenopseustis obliquana.** Kaiapoi, December (1).

Fuchsia sp. (fuchsia).
*Tortrix excessana.** Nelson, October (1).

Humulus lupulus L. (hops).
*Austrotortrix postvittana.** Auckland, March (2 ex heads).

Lycopersicon esculentum Mill. (tomato).
*Austrotortrix postvittana.** Auckland, January (1).

Pisum sativum L. (pea).
*Austrotortrix postvittana.** Christchurch, February (2 ex pods).

Pittosporum crassifolium A. Cunn. (karo).
*Tortrix excessana.** Auckland, December (1). Wellington, March (2).

Prunus armeniaca L. (apricot).
Tortrix excessana. Hastings, January (5). Christchurch, January (1). Christchurch, January (1). Christchurch, November (1). Christchurch, December (1). Earncleugh, January (4). Alexandra, January (1).
Austrotortrix postvittana. Te Awamutu, February (3). Christchurch, January (1).

Ctenopseustis obliquana. Te Awamutu, February (8). Hastings, January (2). Christchurch, January (1). Christchurch, November (1). Christchurch, November (2). Christchurch, November (1). Christchurch, December (1). Earnscleugh, January (2).

Prunus persica (L.) Batsch. (peach).

Ctenopseustis obliquana. Hamilton, January (1 ex fruit). Hamilton, February (1 ex fruit).

Prunus sp. (cherry).

Tortrix excessana. Roxburgh, October (1).

Austrotortrix postvittana. Christchurch, January (1).

*Ctenopseustis obliquana.** Greytown, September (1 ex bud). Roxburgh, October (2).

Prunus sp. (ornamental cherry).

Tortrix excessana. Hamilton, February (2).

*Ctenopseustis obliquana.** Hamilton, February (4).

Prunus sp. (plum).

Tortrix excessana. Christchurch, January (1). Christchurch, January (2). Christchurch, September (2).

Austrotortrix postvittana. Orini, February (1). Christchurch, January (1).

Ctenopseustis obliquana. Orini, February (7). Hamilton, January (1). Christchurch, January (1). Christchurch, January (1). Christchurch, January (1).

Pyrus malus L. (apple).

Tortrix excessana. Hamilton, January (1). Havelock North, March (2). Christchurch, February (1).

Austrotortrix postvittana. Huapai, February (14). Auckland, April (1 ex fruit). Auckland, July (1). Auckland (2). Hamilton, January (1). Hamilton, February (1). Havelock North, March (3). Christchurch, February (1).

Ctenopseustis obliquana. Auckland, April (1 ex fruit). Auckland, July (1). Hamilton, January (3). Havelock North, March (3).

Ribes grossularia L. (gooseberry).

*Ctenopseustis obliquana.** Auckland, March (1).

Ribes nigrum L. (blackcurrant).

*Tortrix excessana.** Levin, October (1). Dunedin, April (6).

*Austrotortrix postvittana.** Levin, October (1).

*Ctenopseustis obliquana.** Dunedin, April (1).

Rosa sp. cult. (rose).

Tortrix excessana. Havelock North, April (4).

Austrotortrix postvittana. Te Kaúwhata, February (5). Havelock North, April (1). Christchurch, February (1).

*Ctenopseustis obliquana.** Te Kauwhata, February (1). Havelock North, April (1).

Rubus fruticosus L. (blackberry).

Austrotortrix postvittana. Tinopai, March (1). Nelson, May (1).

Rubus idaeus L. (raspberry).

Austrotortrix postvittana. Auckland, November (1). Taupo, January (1).

Rubus sp.

Tortrix excessana. Auckland, April (1).

Austrotortrix postvittana. Auckland, April (3).

Ctenopseustis obliquana. Auckland, April (3).

Salix sp. (willow).

*Tortrix excessana.** Opehi, February (1).

Sonchus oleraceous L. (sowthistle).

*Austrotortrix postvittana.** Auckland, February (1).

Thuja plicata Don.

*Austrotortrix postvittana.** Christchurch, October (1).

Vitis vinifera L. (grape).

*Tortrix excessana.** Christchurch, February (2).

Ctenopseustis obliquana. Auckland, December (1). Christchurch, February (1).

Vitis sp.

Austrotortrix postvittana. Auckland, February (5).

Zea mays L. (maize).

*Austrotortrix postvittana.** Auckland, February (1 ex cob-silk).

Acknowledgment

The author wishes to thank members of the field staff of the Department of Agriculture for collection of specimens.

RECORDS OF LEPIDOPTERA

By K. A. J. WISE

Department of Scientific and Industrial Research, Plant Diseases Division, Auckland.

Utetheisa pulchelloides vaga Jordan (Arctiidae).

One male of this immigrant species was taken at Sunnyvale, Henderson, on 11 November, 1955.

Phalaenoides glycinae Lewin (Agaristidae).

Larvae of this, the grape-vine moth, were actively feeding on a Fuchsia bush (*Fuchsia* sp. cult.) in Auckland in April. This food-plant had not previously been recorded in New Zealand.

Melanchra ustistriga (Walker) (Noctuidae: Melanchrinae).

One larva, from Havelock North, discovered feeding on apple leaves and subsequently reared. An adult emerged 26 January, 1956. Previously only recorded from *Lonicera* and *Mühlenbeckia.*

Achaea janata (L.) (Noctuidae: Catocalinae).

In March, 1956, caterpillars, found on castor oil plants (*Ricinus communis* L.) in Gisborne, were forwarded to the Plant Diseases Division by the Horticultural Instructor, Department of Agriculture. Moths emerged later and were identified as *Achaea janata* (L.). Although adults have been taken several times in the past this is the first record of the larva in New Zealand. The species is distributed through Asia, Africa and Australia. In southern India, where it is a serious pest of the castor oil plant, *Achaea janata* has also been recorded from rose, pomegranate, *Bauhinia, Euphorbia, Zizyphus,* and *Ficus bengalensis.* It is recorded from mustard in Ceylon.

Phrissogonus laticostatus (Walker) (Geometridae).

This Australian species has long been established in New Zealand but no food-plants have previously been recorded.

Adults in the Plant Diseases Division collection have been bred from carrot leaves (*Daucus carota* L.), corn cob silk (*Zea mays* L.), *Cotula coronopifolia* L., dahlias (*Dahlia* sp. cult.), and rose blooms (*Rosa* sp. cult.).

HOST PLANTS OF LEAF-ROLLERS (TORTRICIDAE)

Host plants listed below have not previously been recorded for the species given.

Actinidia chinensis Planch. (chinese gooseberry).

Austrotortrix postvittana (Walk.).

Kerikeri, January, 1 specimen.

Ctenopseustis obliquana (Walk.).

Kerikeri, January, 1 specimen.

Camellia japonica L. (camellia).

Ctenopseustis obliquana (Walk.).

Auckland, October, 1 specimen boring in flower bud.

Tortrix excessana (Walk.).

Auckland, October, 1 specimen boring in flower bud.

Citrus sp. (orange).

Cnephasia jactatana (Walk.).

Henderson, January, 1 specimen; February, 1 specimen; November, 1 specimen.

Kerikeri, January, 1 specimen.

Epalxiphora axenana Meyr.

Henderson, January, 3 specimens; February, 6 specimens; November, 4 specimens; December, 4 specimens.

This species has also been bred on citrus in the insectary. One larva, hatched 26 January, pupated 14 March and the adult emerged 26 March. From two other larvae hatched 26 January adults emerged 16 March and 10 April.

Diospyros kaki L.f. (persimmon).

Cnephasia jactatana (Walk.).

Auckland, May, 1 specimen.

Fragaria sp. cult. (strawberry).

Austrotortrix postvittana (Walk.).

Auckland, February, 24 specimens from a heavy infestation in a glasshouse.

Prunus persica (L.) Batsch (peach).

Tortrix flavescens (Butler).

Christchurch, November, 1 specimen.

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